THE OFFICE OF REGULATORY STAFF

DIRECT TESTIMONY AND EXHIBITS

OF

MICHAEL L. SEAMAN-HUYNH

AUGUST 15, 2013

DOCKET NO. 2013-3-E

Annual Review of Base Rates for Fuel Costs of Duke Energy Carolinas, LLC

DIRECT TESTIMONY AND EXHIBITS OF

MICHAEL L. SEAMAN-HUYNH

ON BEHALF OF

THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF

DOCKET NO. 2013-3-E

IN RE: ANNUAL REVIEW OF BASE RATES FOR FUEL COSTS

OF DUKE ENERGY CAROLINAS, LLC

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.

A. My name is Michael Seaman-Huynh. My business address is 1401 Main Street, Suite 900, Columbia, South Carolina 29201. I am employed by the State of South Carolina as a Senior Electric Utilities Specialist in the Electric Department for the Office of Regulatory Staff ("ORS").

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I received my Bachelor's Degree from the University of South Carolina in 1997. Prior to my employment with ORS, I was employed as an energy analyst with a private consulting firm. I joined ORS in 2006 as an Electric Utilities Specialist and was promoted to Senior Electric Utilities Specialist in 2010.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA?

A. Yes. I have previously testified on numerous occasions before the Public Service Commission of South Carolina ("Commission") in conjunction with fuel

clause, general rate case, and Utility Facility Siting and Environmental Protection Act proceedings.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to set forth ORS Electric Department's findings and recommendations resulting from our examination and review of Duke Energy Carolinas, LLC's ("DEC" or "Company") fuel expenses and power plant operations used in the generation of electricity to meet the Company's South Carolina retail customer requirements. The review period includes actual data for June 2012 through May 2013, estimated data for June 2013 through September 2013, and forecasted data for October 2013 through September 2014.

Q. WHAT AREAS WERE ENCOMPASSED IN YOUR REVIEW OF THE COMPANY'S FUEL EXPENSES AND PLANT OPERATIONS?

A. ORS examined various fuel and performance related documents as part of its review. The information reviewed addressed various electric generation and power plant outage and maintenance activities. In preparation for this proceeding, ORS analyzed the Company's monthly fuel reports including power plant performance data, unit outages and generation statistics. ORS evaluated contracts for nuclear fuel, coal, natural gas, fuel oil, transportation, ammonia, lime, and limestone. ORS also evaluated the Company's policies and procedures for fuel procurement. All information was reviewed with reference to the Company's existing Adjustment for Fuel and Variable Environmental Costs tariff and the Fuel Clause statute.

Q. WHAT ADDITIONAL STEPS WERE TAKEN IN ORS'S REVIEW OF THE COMPANY'S PROPOSAL IN THIS PROCEEDING?

A. ORS met with Company personnel from various departments including Power System Operations, Regulated Fuels and Transportation, Natural Gas and Oil Procurement, Nuclear Fuel Supply, Nuclear Engineering, and Fuel Forecasting. These meetings occurred at ORS offices as well as the Company's headquarters in Charlotte, NC. Also, ORS reviewed documentation supporting natural gas purchases for operation of the Company's natural gas fueled generating facilities. In addition, ORS keeps abreast of the nuclear, coal and natural gas industries, including transportation, through industry publications on a daily basis. ORS attended the Nuclear Regulatory Commission 2012 post-annual inspection meetings during April and May 2013 for the Catawba and Oconee nuclear generation stations in Rock Hill and Seneca, SC, respectively.

Q. DID ORS EXAMINE THE COMPANY'S PLANT OPERATIONS FOR THE REVIEW PERIOD?

A. Yes. ORS reviewed the performance of the Company's generation facilities to determine if the Company made reasonable efforts to minimize fuel costs. ORS also reviewed the availability and capacity factors of the Company's power plants by unit. Exhibit MSH-1 shows, in percentages, the monthly availability factors of the Company's major generation units. The corresponding capacity factors in Exhibit MSH-2 indicate the monthly utilization of each unit in producing power.

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF PLANT AVAILABILITY AND HOW IT IS USED IN ORS'S EVALUATION OF THE COMPANY'S PLANT PERFORMANCE.

A. Exhibit MSH-1 enumerates monthly availability by generation unit. ORS examines all occurrences that result in a unit displaying zero availability as well as less than 100% availability. Exhibits MSH-3, MSH-4, and MSH-5 show the summary of outages for the Company's major coal, natural gas, and nuclear units, respectively, for the review period. Exhibits MSH-1 through MSH-5 were used in the evaluation of the Company's plant operations. As an example, Exhibit MSH-1 shows that Marshall Unit 4 had 0.0% availability for the month of April 2013. Exhibit MSH-2 shows that the capacity during that same time period was also 0.0%. Exhibit MSH-3 indicates the reason for this as being the maintenance outage between March 29, 2013 and May 16, 2013; therefore, the unit was not available to generate electricity during this time frame due to these planned activities being performed.

Q. PLEASE EXPLAIN HOW THE OUTAGES ARE REPRESENTED ON EXHIBITS MSH-3 THROUGH MSH-5.

A. Exhibits MSH-3 and MSH-4 provide explanations for major coal and natural gas unit outages lasting 100 hours or greater, respectively. While not all plant outages were included in these Exhibits, all outages were reviewed by ORS. Exhibit MSH-5 provides explanations for all nuclear plant outages during the review period.

Q. PLEASE ADDRESS THE OUTAGES AT THE COMPANY'S THREE NUCLEAR STATIONS.

A. Exhibit MSH-5 shows the duration, type, and cause of the outages at the Company's nuclear stations. During the review period there were eight (8) separate outages, including five (5) scheduled refueling outages and three (3) forced outages. ORS noted that four (4) of the refueling outages were extended beyond their intended restart dates. The extensions were due primarily to emergent issues that arose during these outages that needed to be addressed while the units were offline. Including these outages, the three (3) nuclear stations, consisting of seven (7) units, achieved an overall 92.3% actual availability factor and 93.7% actual capacity factor for the review period as shown in Exhibits MSH-1 and MSH-2 respectively.

Q. PLEASE ELABORATE ON OTHER AREAS OF THE COMPANY'S PLANT OPERATIONS THAT WERE REVIEWED BY ORS.

A. Exhibit MSH-6 provides a history of the availability of the Company's coal, natural gas combined-cycle, and nuclear generation plants for the period 2007 through 2012. This Exhibit includes the North American Electric Reliability Corporation's ("NERC") national five-year (2007-2011) average availability for each type of generation plant. During the review period, the Company's coal, combined-cycle and nuclear units performed better than the NERC five-year average.

Exhibit MSH-7 provides the average forced outage rates for the Company's coal, natural gas combined-cycle, and nuclear generation plants for the same time period. During the actual review period, the Company's coal, combined-cycle, and nuclear units performed better than the NERC five-year average.

However, ORS noted that individual Company coal units have periodically experienced forced outage rates higher than the NERC five-year average. Most recently, Cliffside Unit 6 had a forced outage rate of 11.99% during the review period compared to the NERC five-year average of 5.90%. This was primarily due to the 7-day forced outage at the plant beginning on April 1, 2013 and lasting until April 8, 2013 to address a seat drain line issue, as shown on Exhibit MSH-3. It should be noted that this unit began commercial operations on December 30, 2013, and ORS anticipates the performance of the unit to improve over time.

Additionally, ORS recognized that at times individual Company nuclear units have experienced forced outage rates higher than the NERC five-year average. For example, during the review period McGuire Unit 2 had a forced outage rate of 12.08% as compared to the NERC five-year average of 2.51%. Primarily, this was due to the 38-day outage extension at the plant beginning on October 23, 2012 and lasting until November 30, 2012, as shown on Exhibit MSH-5. ORS will continue to monitor the Company's progress in reducing the forced outage rates of its nuclear units.

Q. DID ORS REVIEW THE COMPANY'S GENERATION MIX DURING THE REVIEW PERIOD?

A. Yes. Exhibit MSH-8 shows the megawatt-hour ("MWh") generation mix for the review period by percentage and generation type. As shown in this Exhibit, the coal and nuclear plants contributed 83.5% of the Company's generation throughout the review period. Jointly, the combined-cycle and combustion turbine natural gas-

fired plants contributed 6.6% of the generation. The remainder of the generation was met through a mix of hydroelectric and purchased power.

Q. DID ORS EXAMINE THE COMPANY'S FUEL COSTS ON A PLANT-BY-PLANT BASIS FOR THE REVIEW PERIOD?

A. Yes. Exhibit MSH-9 shows the average fuel costs for the major generation plants on the Company's system for the review period and the MWhs produced by those respective plants. ORS's review revealed the lowest average fuel cost of 0.558 cents/kilowatt-hour ("kWh") at the McGuire Nuclear Station and the highest average fuel cost of 5.419 cents/kWh at the now-retired Buck coal-fired station. The Company utilizes economic dispatch which generally requires that the lower cost units are dispatched first.

Q. DID ORS REVIEW THE COMPANY'S ENVIRONMENTAL RELATED COSTS?

A. Yes. ORS reviewed the Company's environmental costs including allowances for nitrogen oxide ("NO_X") and sulfur dioxide ("SO_2") emissions and reagents and other chemicals used in the reduction of these emissions. Along with ammonia, lime, and limestone, ORS reviewed the Company's use of magnesium hydroxide, calcium carbonate, and other emission-reducing reagents in its power plants. ORS agrees that the use of these chemicals and reagents does reduce the Company's NO_X and SO_2 emissions, and that the costs associated with them should be included in the Company's Adjustment for Fuel and Variable Environmental Costs as provided by S.C. Code Ann. § 58-27-865.

Q. HAS ORS REVIEWED THE COMPANY'S SAVINGS FROM THE JOINT DISPATCH AGREEMENT AND MERGER-RELATED SAVINGS?

A. Yes. As part of this proceeding, ORS reviewed the Company's methodology for tracking savings from the Joint Dispatch Agreement ("JDA") between DEC and Progress Energy Carolinas, Inc., now known as Duke Energy Progress, Inc., (collectively referred to as the "Companies") and the system fuel and fuel-related cost savings resulting from the merger ("Merger Fuel Savings") of Duke Energy Corporation and Progress Energy, Inc. ORS reviewed the monthly fuel reports and the South Carolina Quarterly Surveillance Reports filed with the Commission that detail the JDA and Merger Fuel Savings. On December 18, 2012, ORS filed a review letter with the Commission stating that it was satisfied with the monthly reporting on the JDA and Merger Fuel Savings that the Companies were filing as part of their monthly fuel reports. Additionally, ORS met with a number of Company personnel to discuss and review the Company's allocation of these savings between the Companies and between South Carolina and North Carolina. Consistent with Commission Order No. 2013-311, ORS will continue to monitor and review the JDA and Merger Fuel Savings. Through May 2013, the Companies have reported savings of approximately $105.5 million of the $686.8 million guaranteed by the Company. As of May 2013, DEC has reported approximately $17.2 million in guaranteed savings allocated to its South Carolina retail ratepayers.

Q. HAS ORS REVIEWED THE ACCURACY OF THE COMPANY'S FORECAST?

A. Yes. As shown in Exhibit MSH-10, the Company's actual MWh sales versus estimated sales were 0.99% lower than expected during the review period. In addition, Exhibit MSH-11 shows the monthly variance between the actual and projected fuel costs for the review period illustrating that the cumulative average actual fuel costs for the period were 0.13% higher than the projected fuel costs.

Q. WHAT OTHER INFORMATION HAS ORS REVIEWED AS PART OF ITS EVALUATION IN THIS PROCEEDING?

A. Exhibit MSH-12 shows ending period balances of fuel costs beginning in May 1993. The Company has experienced both under-recovery and over-recovery balances throughout the approximate twenty-year period. As of May 2013, the balance in the cumulative recovery account is an over-recovery of $25,476,878, as shown on Exhibit MSH-12. As testified to by ORS witness Smith, this balance includes adjustments made by ORS in May 2013 totaling $1,805,529. This number was provided by the ORS Audit Department and can be found on ORS Audit Exhibit GS-5. This number does not include the environmental cost component, which had a cumulative over-recovery of $6,084,377 as of May 2013 which can be found on ORS Audit Exhibit GS-7.

Q. WHAT OTHER SOURCES OF INFORMATION DOES ORS USE IN DETERMINING THE REASONABLENESS OF A UTILITY'S REQUEST FOR A FUEL COST COMPONENT?

A. ORS routinely 1) reviews private and public industry publications including those available on the Energy Information Administration's website; 2) conducts meetings with Company personnel; 3) attends industry conferences; and 4) reviews fuel information as filed monthly by electric generation utilities with the Federal Government.

Q. HAS ORS DETERMINED THE CORE CAUSES OF THE COMPANY'S REQUEST FOR AN INCREASE IN THE FUEL FACTOR ASSOCIATED WITH THIS PROCEEDING?

A. Yes. Through the review process, ORS concluded the primary drivers causing the increase in the fuel factor are increases in the cost of delivered coal and nuclear fuel and the depletion of the Company's historical over-recovered balances of $57,873,577 in base fuel costs and $8,160,813 in environmental costs from its last fuel proceeding (Docket No. 2012-3-E).

Q. DOES ORS RECOMMEND ANY ADJUSTMENTS TO THE BASE FUEL COSTS PROPOSED BY THE COMPANY?

A. Yes. ORS recommends making an over-recovery adjustment of $1,699,158 to the Company's base fuel costs to recognize an additional dollar amount for replacement power due to the extension of a scheduled refueling outage at McGuire Unit 2. This adjustment was provided to the ORS Audit Department by the ORS Electric Department, and is reflected in Audit Adjustment 1.

ORS recommends making an over-recovery adjustment of $106,371 to the Company's base fuel costs to reflect penalties paid to CSX Transportation as a result of coal shipments that did not meet contractual train minimum weights. This adjustment was provided to the ORS Audit Department by the ORS Electric Department, and is reflected in Audit Adjustment 2.

Q. DOES ORS HAVE ANY RECOMMENDATIONS PERTAINING TO THE COMPANY'S FORECAST?

Yes. Since the Company's filing of its Direct Testimony on August 2, 2013, ORS has noted that natural gas prices have continued to decline. ORS recommends reducing the Company's forecasted natural gas fuel costs by $3,436,728 to reflect lower forecasted natural gas costs.

Q. DOES ORS RECOMMEND ANY ADJUSTMENTS TO THE ENVIRONMENTAL COSTS PROPOSED BY THE COMPANY?

A. Yes. The Company included costs associated with gypsum that are not recoverable under S.C. Code Ann. § 58-27-865. Therefore, ORS removed $1,381,645 of these costs from the environmental forecast for the months of October 2013 through September 2014. ORS witness Smith removed the same type of costs for the estimated months of July 2013, August 2013, and September 2013 in Audit Adjustments 4A, 4B, and 4C, respectively. The effect of these adjustments results in ORS recommending an environmental fuel factor for each class as follows: 0.0525 cents/kWh for Residential customers; 0.0313 cents/kWh for General/Lighting customers; and 0.0200 cents/kWh for Industrial customers.

Q. WHAT IMPACT WILL ORS'S PROPOSED FUEL FACTOR HAVE ON A RESIDENTIAL CUSTOMER'S BILL?

A. As shown in Exhibit MSH-13, the ORS proposed base fuel factor is 2.1800 cents/kWh compared to the Company's proposed base fuel factor of 2.2049 cents/kWh. Exhibit MSH-14 reflects the ORS proposed base fuel rate and the ORS recommended environmental rates for Residential, General/Lighting, and Industrial customer classes. If approved by the Commission, the ORS proposed rates would increase the average monthly bill for a residential customer using 1000 kWh on Rate RS from $100.45 to $103.29. This equates to an increase of approximately $2.84 or 2.83%.

Q. ARE THERE ANY ADDITIONAL FACTORS THAT WILL IMPACT CUSTOMERS' BILLS?

A. Yes. By Commission Order No. 2012-647, the Company's Merger Fuel Savings Rider MFS ("Rider") is set to expire on September 30, 2013. Merger Fuel Savings will be addressed in the Company's annual fuel proceedings going forward. The expiration of the Rider will increase the average monthly bill for a residential customer, using 1000 kWh on Rate RS, by approximately $0.65. The net increase from ORS's proposed fuel factor and the expiration of the Rider is an increase of approximately $3.49, or 3.47% to the same customer's monthly bill. Including the expiration of the Rider, the customer's monthly bill would be approximately $103.94.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Office of Regulatory Staff

Power Plant Performance Data Report - Availability Factors (Percentage)

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

			Historical Data			*Review Period (Actual) Data*												
Plant	**Unit**	**MW Rating**	**2010**	**2011**	**2012**	**Jun 2012**	**Jul 2012**	**Aug 2012**	**Sept 2012**	**Oct 2012**	**Nov 2012**	**Dec 2012**	**Jan 2013**	**Feb 2013**	**Mar 2013**	**Apr 2013**	**May 2013**	**Average Review Pd.**
Belews Creek	1	1110	93.4	90.9	91.4	100.0	100.0	100.0	85.1	85.7	93.0	91.3	100.0	95.4	100.0	49.1	100.0	**91.7**
Belews Creek	2	1110	73.0	91.6	86.9	100.0	100.0	100.0	92.0	79.6	100.0	96.6	90.5	100.0	49.3	70.9	100.0	**89.8**
Cliffside	5	552	65.4	93.8	90.5	100.0	100.0	99.3	100.0	89.7	100.0	57.5	100.0	97.5	100.0	99.2	94.8	**94.8**
Cliffside	6 [1]	825	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	87.5	81.9	97.6	57.7	90.8	**83.3**
Marshall	1	380	88.6	71.0	86.8	73.3	96.3	99.4	62.3	79.4	99.1	98.9	98.5	92.7	90.6	97.8	92.3	**90.1**
Marshall	2	380	88.5	88.2	90.7	99.1	93.7	84.7	65.4	81.4	96.9	100.0	100.0	100.0	97.6	88.4	80.4	**90.6**
Marshall	3	658	93.4	91.6	90.2	100.0	100.0	100.0	89.3	94.7	82.9	94.9	100.0	94.4	2.5	0.0	0.0	**71.4**
Marshall	4	660	94.4	89.7	88.2	100.0	79.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	86.4	0.0	48.8	**84.5**
Coal Total		**5675**	**84.9**	**89.6**	**89.3**	**96.1**	**95.6**	**97.6**	**84.9**	**87.2**	**96.0**	**91.3**	**97.1**	**95.2**	**78.0**	**57.9**	**75.9**	**87.4**
Buck	10	620	n/a	n/a	89.9	99.0	95.7	99.9	100.0	100.0	58.5	100.0	99.9	99.9	100.0	80.5	83.1	**93.1**
Dan River	7 [2]	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100.0	77.0	95.2	100.0	83.3	**91.3**
CC Total [3]		**1240**	**n/a**	**n/a**	**89.9**	**99.0**	**95.7**	**99.9**	**100.0**	**100.0**	**58.5**	**100.0**	**99.9**	**88.4**	**97.6**	**90.3**	**83.2**	**92.6**
Catawba	1 [4]	1129	98.5	87.2	87.3	100.0	100.0	100.0	100.0	100.0	77.3	11.3	100.0	100.0	100.0	100.0	100.0	**90.6**
Catawba	2 [5]	1129	90.8	99.5	89.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
McGuire	1	1129	88.8	91.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	89.3	49.2	27.1	100.0	**88.9**
McGuire	2	1129	100.0	88.0	78.8	100.0	100.0	100.0	47.6	0.0	0.8	96.8	100.0	100.0	100.0	100.0	100.0	**78.8**
Oconee	1	846	99.3	79.0	90.0	100.0	91.8	100.0	100.0	83.6	3.3	100.0	100.0	100.0	100.0	100.0	100.0	**90.0**
Oconee	2	846	89.4	92.5	99.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
Oconee	3	846	90.1	99.7	85.1	77.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**98.2**
Nuclear Total		**7054**	**93.8**	**91.0**	**90.0**	**96.8**	**98.8**	**100.0**	**92.5**	**83.4**	**68.8**	**86.9**	**100.0**	**98.5**	**92.8**	**89.6**	**100.0**	**92.3**

[1] Cliffside Unit 6 began commercial operations on December 30, 2012

[2] Dan River CC began commercial operations on December 10, 2012

[3] CC designates Combined-Cycle units

[4] Catawba Unit 1 Ownership: North Carolina Electric Membership Corp. (~61.51%) and Duke Energy Carolinas, LLC (~38.49%)

[5] Catawba Unit 2 Ownership: North Carolina Municipal Power Agency No. 1 (75%) and Piedmont Municipal Power Agency (25%)

EXHIBIT MSH-1

Office of Regulatory Staff

Power Plant Performance Data Report - Capacity Factors (Percentage)

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

			Historical Data				*Review Period (Actual) Data*												
Plant	**Unit**	**MW Rating**	**Life[1] Time**	**2010**	**2011**	**2012**	**Jun 2012**	**Jul 2012**	**Aug 2012**	**Sept 2012**	**Oct 2012**	**Nov 2012**	**Dec 2012**	**Jan 2013**	**Feb 2013**	**Mar 2013**	**Apr 2013**	**May 2013**	**Average Review Pd.**
Belews Creek	1	1110	n/a	85.8	82.0	78.7	87.7	94.8	87.5	69.5	74.2	86.5	83.2	82.1	84.6	91.3	36.3	46.1	**77.0**
Belews Creek	2	1110	n/a	65.5	83.0	64.7	84.4	90.4	80.5	46.4	5.1	71.0	78.8	61.7	79.9	43.3	41.1	83.5	**63.8**
Cliffside	5	552	n/a	51.1	53.7	23.7	28.2	76.3	20.0	34.5	25.7	17.1	0.0	9.7	32.1	79.4	36.7	3.6	**30.3**
Cliffside	6	825	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	67.8	74.6	89.8	44.9	69.4	**69.3**
Marshall	1	380	n/a	57.8	42.9	32.2	26.9	65.3	42.8	15.9	4.7	55.4	27.2	12.5	24.6	45.6	63.2	49.6	**36.1**
Marshall	2	380	n/a	52.6	56.2	41.0	44.0	63.4	39.0	16.7	15.3	58.0	56.6	15.4	29.1	61.3	58.7	43.1	**41.7**
Marshall	3	658	n/a	74.5	69.1	56.2	66.3	79.3	75.7	62.6	67.4	70.8	74.7	69.5	48.6	1.9	0.0	0.0	**51.4**
Marshall	4	660	n/a	83.3	70.5	67.4	71.3	61.9	81.0	72.5	77.7	83.4	78.7	69.7	77.4	68.6	0.0	34.3	**64.7**
Coal Total		**5675**	**n/a**	**70.5**	**70.6**	**58.0**	**66.8**	**80.3**	**68.4**	**51.3**	**42.4**	**67.8**	**64.5**	**56.9**	**64.4**	**62.5**	**33.4**	**46.0**	**59.3**
Buck	10	620	n/a	n/a	n/a	76.5	84.6	81.7	80.8	93.9	93.0	53.1	94.9	79.0	92.3	91.1	70.7	66.4	**81.8**
Dan River	7	620	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	76.0	70.4	83.4	85.8	50.4	**73.2**
CC Total		**1240**	**n/a**	**n/a**	**n/a**	**76.5**	**84.6**	**81.7**	**80.8**	**93.9**	**93.0**	**53.1**	**94.9**	**77.5**	**81.3**	**87.3**	**78.2**	**58.4**	**77.5**
Catawba	1	1129	84.4	99.8	88.7	88.4	102.1	101.4	101.2	102.0	102.7	78.3	6.5	103.2	103.5	103.4	102.9	102.4	**92.5**
Catawba	2	1129	85.9	91.8	101.4	91.4	102.5	101.4	101.7	102.3	103.0	103.7	102.9	103.7	103.8	103.9	103.2	98.3	**102.5**
McGuire	1	1129	79.0	91.7	94.3	104.7	104.1	103.0	103.3	103.3	104.8	105.0	105.2	102.6	85.9	44.6	22.3	103.1	**90.6**
McGuire	2	1129	84.7	103.9	91.1	81.3	104.3	103.0	102.7	47.1	0.0	0.0	94.3	103.2	103.4	103.2	103.1	102.5	**80.6**
Oconee	1	846	77.6	100.3	79.4	90.2	101.2	86.1	99.1	99.3	83.5	0.6	101.7	102.4	102.4	101.7	102.2	102.0	**90.2**
Oconee	2	846	80.6	91.0	92.6	101.4	101.5	100.5	99.7	99.9	101.2	102.4	102.9	102.9	102.9	102.8	102.6	102.4	**101.8**
Oconee	3	846	80.1	91.4	102.6	86.2	77.4	101.7	100.9	101.1	102.4	103.4	103.6	103.9	103.9	103.9	103.6	103.6	**100.8**
Nuclear Total		**7054**	**81.8**	**95.1**	**92.3**	**91.9**	**99.7**	**100.0**	**101.4**	**92.8**	**84.1**	**70.7**	**86.4**	**103.1**	**100.6**	**93.8**	**90.0**	**102.0**	**93.7**

[1] The Lifetime Nuclear Capacity Factors are through May 2013

EXHIBIT MSH-2

Office of Regulatory Staff
Coal Unit Outage Report - 100 Hrs or Greater Duration
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

Unit	Date Offline	Date Online	Hours	Outage Type	Explanation of Outage
Belews Creek 1	4/12/13	4/28/13	366.7	Maintenance	Unit was taken offline for a scheduled Spring Outage.
Belews Creek 2	10/26/12	10/31/12	127.7	Maintenance	Unit was taken offline to repair 2B boiler feed pump.
Belews Creek 2	3/1/13	3/17/13	377.8	Planned	Unit was taken offline for a scheduled Spring Outage.
Belews Creek 2	4/6/13	4/12/13	161.5	Maintenance	Unit was taken offline to repair a steam leak.
Cliffside 5	12/1/12	12/14/12	316.6	Planned	Unit was taken offline for a scheduled boiler inspection.
Cliffside 6	4/1/13	4/8/13	166.8	Forced	Unit was forced offline to address a seat drain line issue.
Cliffside 6	4/8/13	4/13/13	116.4	Planned	Unit was taken offline for a scheduled Spring Outage.
Marshall 1	6/4/12	6/8/12	104.9	Maintenance	Unit was taken offline for boiler waterwall tube eddy current testing.
Marshall 1	9/21/12	10/7/12	391.2	Planned	Unit was taken offline for a scheduled Fall Outage.
Marshall 2	9/21/12	10/6/12	378.2	Planned	Unit was taken offline for a scheduled Fall Outage.
Marshall 2	5/10/13	5/15/13	112.1	Maintenance	Unit was taken offline to replace a flue-gas desulfurization booster fan.
Marshall 3	11/10/12	11/15/12	123.1	Maintenance	Unit was taken offline to address bottom ash removal.
Marshall 3 [1]	3/1/13	7/20/13	3,386.6	Planned / Maintenance	Unit was taken offline for a scheduled Spring Outage and to repair low pressure turbine blades.
Marshall 4	7/18/12	7/25/12	153.1	Forced	Unit was forced offline due to a tube leak.
Marshall 4	3/29/13	5/16/13	1,154.6	Maintenance	Unit was taken offline to repair low pressure turbine blades.

[1] This outage was completed after the Review Period.

EXHIBIT MSH-4

Office of Regulatory Staff

CC Unit Outage Report - 100 Hrs or Greater Duration

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

Unit	Date Offline	Date Online	Hours	Outage Type	Explanation of Outage
Buck 10	11/17/12	11/29/12	299.5	Planned	Unit was taken offline to change out refractory ceramic fibre insulation.
Buck 10	4/26/13	5/6/13	245.8	Planned	Unit was taken offline for scheduled borescope inspection.
Dan River 7	2/22/13	3/2/13	179.0	Maintenance	Unit was taken offline for warranty repairs.
Dan River 7	5/5/13	5/10/13	115.9	Forced	Unit was forced offline due to failed valve test.

Office of Regulatory Staff
Nuclear Unit Outage Report
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

Unit	Date Offline	Date Online	Hours	Outage Type	Explanation of Outage
Catawba 1	11/24/12	12/20/12	624.0	Planned	Unit was taken offline for a scheduled refueling outage.
Catawba 1	12/20/12	12/28/12	195.6	Outage Extension	Scheduled refueling outage was extended due to emergent issues.
McGuire 1	2/21/13	2/24/13	71.8	Forced	Unit was forced offline to repair 1 CM-420 standby hotwell pump circuitry.
McGuire 1	3/16/13	4/21/13	864.0	Planned	Unit was taken offline for a scheduled refueling outage.
McGuire 1	4/21/13	4/22/13	37.9	Outage Extension	Scheduled refueling outage was extended due to emergent issues.
McGuire 2	9/15/12	10/23/12	912.0	Planned	Unit was taken offline for a scheduled refueling outage.
McGuire 2	10/23/12	11/30/12	924.3	Outage Extension	Scheduled refueling outage was extended due to emergent issues.
McGuire 2	12/1/12	12/2/12	23.7	Forced	Unit was forced offline due to incorrect turbine inlet pressure setpoint
Oconee 1	7/17/12	7/19/12	61.3	Forced	Unit was forced offline due to pressurizer level instrumentation isolation valve leakage
Oconee 1	10/26/12	11/24/12	696.0	Planned	Unit was taken offline for a scheduled refueling outage.
Oconee 1	11/24/12	11/29/12	122.7	Outage Extension	Scheduled refueling outage was extended due to emergent issues.
Oconee 3 [1]	4/13/12	6/7/12	1313.5	Planned	Unit was taken offline for a scheduled refueling outage.

[1] This outage began prior to the Review Period.

EXHIBIT MSH-6

Office of Regulatory Staff

Power Plant Availability (Percentage)

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

Coal-Fired Plants									
Plant	**Unit**	**MW Rating**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Average Review Period**
Belews Creek	1	1110	73.7	91.0	83.0	93.4	90.9	91.4	**91.7**
Belews Creek	2	1110	92.2	87.0	90.2	73.0	91.6	86.9	**89.8**
Cliffside	5	552	86.1	92.1	91.8	65.4	93.8	90.5	**94.8**
Cliffside	6	825	n/a	n/a	n/a	n/a	n/a	n/a	**83.3**
Marshall	1	380	86.1	93.1	87.6	88.6	71.0	86.8	**90.1**
Marshall	2	380	90.5	72.9	88.0	88.5	88.2	90.7	**90.6**
Marshall	3	658	88.2	72.1	90.7	93.4	91.6	90.2	**71.4**
Marshall	4	660	92.2	83.2	90.2	94.4	89.7	88.2	**84.5**
SystemTotal		**5,675**	**86.1**	**85.4**	**88.4**	**84.9**	**89.6**	**89.3**	**87.4**
									(2007-2011)
NERC 5-year average (All Coal Plants)									**86.2**

Combined Cycle Plants									
Plant	**Unit**	**MW Rating**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Average Review Period**
Buck	10	620	n/a	n/a	n/a	n/a	n/a	89.9	**93.1**
Dan River	7	620	n/a	n/a	n/a	n/a	n/a	n/a	**91.3**
Total		**1,240**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**89.9**	**92.6**
									(2007-2011)
NERC 5-year average (CC Plants)									**89.1**

Nuclear Plants									
Plant	**Unit**	**MW Rating**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Average Review Period**
Catawba	1	1129	99.7	86.6	89.4	98.5	87.2	87.3	**90.6**
Catawba	2	1129	82.9	100.0	88.3	90.8	99.5	89.4	**100.0**
McGuire	1	1129	78.2	84.4	100.0	88.8	91.1	100.0	**88.9**
McGuire	2	1129	100.0	87.1	90.3	100.0	88.0	78.8	**78.8**
Oconee	1	846	97.7	86.1	84.4	99.3	79.0	90.0	**90.0**
Oconee	2	846	90.0	85.1	100.0	89.4	92.5	99.7	**100.0**
Oconee	3	846	85.6	99.2	91.8	90.1	99.7	85.1	**98.2**
Total		**7,054**	**90.6**	**89.8**	**92.0**	**93.8**	**91.0**	**90.0**	**92.3**
									(2007-2011)
NERC 5-year average (All Nuclear Plants)									**90.1**

EXHIBIT MSH-7

Office of Regulatory Staff

Power Plant Forced Outages (Percentage)

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

Coal-Fired Plants

Plant	Unit	MW Rating	2007	2008	2009	2010	2011	2012	Average Review Period
Belews Creek	1	1110	5.48	2.10	1.10	4.50	1.64	3.10	**3.18**
Belews Creek	2	1110	2.27	5.73	6.93	4.07	5.94	0.49	**0.49**
Cliffside	5	552	10.35	1.03	2.21	12.76	5.60	0.00	**0.28**
Cliffside	6	825	n/a	n/a	n/a	n/a	n/a	n/a	**11.99**
Marshall	1	380	9.49	2.49	6.19	6.07	8.26	3.05	**2.45**
Marshall	2	380	2.89	4.36	6.67	6.67	1.73	1.77	**0.85**
Marshall	3	658	6.30	5.26	3.40	4.06	2.81	0.37	**0.00**
Marshall	4	660	3.54	9.57	3.72	1.68	2.80	3.08	**2.67**
System Total		**5,675**	**5.25**	**4.43**	**4.09**	**4.98**	**3.83**	**1.84**	**2.49**
									(2007-2011)
NERC 5-year average (All Coal Plants)									**5.90**

Combined Cycle Plants

Plant	Unit	MW Rating	2007	2008	2009	2010	2011	2012	Average Review Period
Buck	10	620	n/a	n/a	n/a	n/a	n/a	1.27	**0.76**
Dan River	7	620	n/a	n/a	n/a	n/a	n/a	n/a	**4.18**
Total		**1,240**	**n/a**	**n/a**	**n/a**	**n/a**	**0.00**	**1.27**	**1.73**
									(2007-2011)
NERC 5-year average (CC Plants)									**5.05**

Nuclear Plants

Plant	Unit	MW Rating	2007	2008	2009	2010	2011	2012	Average Review Period
Catawba	1	1129	0.35	1.19	0.00	1.49	0.32	6.04	**2.41**
Catawba	2	1129	0.23	0.00	0.52	1.35	0.50	3.42	**0.00**
McGuire	1	1129	5.45	6.97	0.00	2.07	1.46	0.00	**1.39**
McGuire	2	1129	0.00	1.37	0.46	0.00	4.44	12.04	**12.08**
Oconee	1	846	2.26	6.68	5.01	0.73	2.70	2.28	**2.28**
Oconee	2	846	1.13	3.62	0.00	1.06	0.00	0.31	**0.00**
Oconee	3	846	1.10	0.76	0.96	2.47	0.34	0.00	**0.00**
Total		**7,054**	**1.44**	**2.89**	**0.96**	**1.29**	**1.36**	**3.37**	**2.48**
									(2007-2011)
NERC 5-year average (All Nuclear Plants)									**2.51**

Office of Regulatory Staff
Generation Mix: June 2012 – May 2013
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

Month	Percentage [1]					
	Coal	Nuclear	Combined Cycle	Combustion Turbine	Hydro	Purchased Power
2012						
June	30.0	56.9	4.3	1.0	0.2	7.6
July	35.0	50.0	3.6	2.5	0.1	8.6
August	30.3	54.6	3.9	1.1	0.5	9.7
September	24.5	56.4	5.1	0.4	0.4	13.3
October	20.2	56.1	5.6	0.3	0.8	17.1
November	35.3	44.5	4.3	0.3	0.3	15.4
December	32.4	56.4	7.2	0.1	0.3	3.7
2013						
January	28.3	57.6	7.6	0.0	2.2	4.3
February	30.4	54.1	7.7	0.1	2.6	5.2
March	31.2	52.5	8.6	0.1	1.9	5.7
April	19.6	58.7	9.0	0.1	1.9	10.8
May	23.2	63.2	6.4	0.4	2.6	4.2
AVERAGE	**28.4**	**55.1**	**6.1**	**0.5**	**1.1**	**8.8**

[1] Numbers may not equal 100% due to rounding.

Office of Regulatory Staff

Generation Statistics for Major Plants: June 2012 – May 2013

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

Plant	Fuel Type	Average Fuel Cost (Cents/kWh)	Generation (MWh)
McGuire	Nuclear	0.558	16,662,667
Catawba	Nuclear	0.585	19,270,528
Oconee	Nuclear	0.614	21,700,478
Buck CC	Natural Gas	2.792	4,440,359
Dan River CC	Natural Gas	3.028	1,895,085
Rockingham	Natural Gas	3.586	465,067
Belews Creek	Coal	3.680	13,684,385
Marshall	Coal	3.816	9,297,335
Cliffside	Coal	4.707	4,308,580
Allen	Coal	4.742	2,049,178
Riverbend [1]	Coal/Natural Gas	5.050	260,625
Lee	Coal/Natural Gas	5.123	145,201
Buck [1]	Coal/Natural Gas	5.419	279,273

[1] The Buck and Riverbend coal plants were retired April 1, 2013.

Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Energy Sales
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

		2012							2013					
		June	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Period Total**
[1]	**Actual Sales (MWh)**	1,814,523	1,966,855	1,991,846	1,855,253	1,534,507	1,550,186	1,603,650	1,716,199	1,738,937	1,600,963	1,619,268	1,563,554	**20,555,741**
[2]	**Estimated Sales (MWh)**	1,785,507	1,901,442	1,959,995	1,918,319	1,560,737	1,552,533	1,696,920	1,836,199	1,810,721	1,604,464	1,585,210	1,548,355	**20,760,402**
[3]	**Difference [1]-[2]**	29,016	65,413	31,851	-63,066	-26,230	-2,347	-93,270	-120,000	-71,784	-3,501	34,058	15,199	**-204,661**
[4]	**Percent Difference [3]/[2]**	1.63%	3.44%	1.63%	-3.29%	-1.68%	-0.15%	-5.50%	-6.54%	-3.96%	-0.22%	2.15%	0.98%	**-0.99%**

EXHIBIT MSH-10

Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Fuel Cost
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

		2012							2013					
		June	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Period Average**
[1]	**Actual Experience (¢/kWh)**	2.3214	2.7069	2.2617	1.9267	2.1792	2.7312	2.1786	2.1229	1.9951	2.2892	1.8771	1.9747	**2.2137**
[2]	**Original Projection (¢/kWh)**	2.2843	2.2050	2.2728	2.4947	2.2117	2.1884	2.0762	2.2464	2.3825	2.1124	2.2022	1.8545	**2.2109**
[3]	**Amount in Base (¢/kWh)**	2.5273	2.5273	2.5273	2.5273	1.9489	1.9489	1.9489	1.9489	1.9489	1.9489	1.9489	1.9489	**2.1417**
[4]	**Variance from Projection [1-2]/[2]**	1.62%	22.76%	-0.49%	-22.77%	-1.47%	24.80%	4.93%	-5.50%	-16.26%	8.37%	-14.76%	6.48%	**0.13%**

EXHIBIT MSH-11

Office of Regulatory Staff

History of Cumulative Recovery Account Report

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

PERIOD ENDING	OVER (UNDER) $
May-93	16,959,555
November-93	221,606
May-94	6,609,897
November-94	1,037,659
May-95	5,088,619
November-95	(377,507)
March-97	(13,299,613)
March-98	(1,956,794)
March-99	13,044,443
March-00	26,703,441
March-01	20,367,528
March-02	(7,446,417)
March-03	(1,121,094)
March-04	11,424,295
June-05	(2,669,646)
June-06	6,984,672
June-07	1,632,482
May-08	(12,225,796)
May-09	47,830,080
May-10	57,028,206
May-11	(528,767)
May-12	41,792,888
May-13	25,476,878

Office of Regulatory Staff

EXHIBIT MSH-13

Calculation of Base Fuel Component

Duke Energy Carolinas, LLC

Docket No. 2013-3-E

Projected Fuel Expense: October 2013 through September 2014	
Cost of Fuel	$1,797,465,736
System Sales (MWh)	82,936,805
Average Cost (cents/kWh)	2.167
Revenue Difference To be Collected from October 2013 through September 2014	
(Over)/Under-Recovery at September 30, 2013	$2,683,314
Projected S.C. Retail Sales (MWh)	21,084,217
Average Cost (cents/kWh)	0.013
Base Fuel Cost Per kWh: Projected Period	
Average Fuel Cost (cents/kWh)	2.167
Revenue Difference (cents/kWh)	0.013
Base Fuel Component (cents/kWh)	***2.180***

EXHIBIT MSH-14

Office of Regulatory Staff
Proposed Fuel Factors
Duke Energy Carolinas, LLC
Docket No. 2013-3-E

	Duke Proposed Fuel Factors (¢/kWh)			ORS Proposed Fuel Factor (¢/kWh)		
Customer Class	**Base Fuel Factor**	**Environmental Fuel Factor**	**Total Fuel Factor**	**Base Fuel Factor**	**Environmental Fuel Factor**	**Total Fuel Factor**
Residential	2.2049	0.0647	2.2696	2.1800	0.0525	2.2325
General/Lighting	2.2049	0.0398	2.2447	2.1800	0.0313	2.2113
Industrial	2.2049	0.0258	2.2307	2.1800	0.0200	2.2000